

Claims

1. Device for actuating the charge-cycling valves (V) in reciprocating internal combustion engines, consisting of a housing (G); a cam (N) mounted in the housing (G) in a revolute joint (ng) so as to be able to rotate, the rotational movement of which cam is derived from a crankshaft; an intermediate member (Z) activated by this cam (N) by way of a first cam joint (zn); and a power take-off member (A) that transfers the movement to the valve (V), and is connected to act with the intermediate member (Z), directly or via other transfer elements, and at least one other cam joint (za) is provided within the active connection from the first cam joint (zn) to the power take-off member (A), **characterized in that** this other cam joint (za) is formed by a cam (Kz or Ka, respectively) on one of the two gear mechanism members (Z, A) that form the cam joint (za), in and of themselves, the shape of which cam has at least one point of inflection (W) in the contact region in which the valve has a valve lift that is greater than zero.

2. Device of claim 1, characterized in that the movement transferring to the valve (V) can be changed by means of modifying the position and the orientation of at least one gear mechanism member or its joint positions to the housing (G).

3. Device of claim 1 or 2, characterized in that the cam joint (za) at one of the two gear mechanism members (Z, A) forming the same is formed by a cam (Kz or Ka, respectively), the shape of which has a point of inflection (W) precisely in the contact region in which the valve has a valve lift that is greater than zero.

4. Device of one of claims 1 to 3, characterized in that the point of inflection (W) is disposed essentially in the region of the starting and ending valve lift.

5. Device of one of claims 1 to 3, characterized in that the point of inflection (W) is disposed in the region of the cam (Kz or Ka, respectively) that describes the greatest possible valve lift.

6. Device of one of claims 1 to 5, characterized in that the cam joint (za) is formed on the other of the two gear mechanism members (Z, A) forming the same, by a cam (Ka or Kz, respectively), the shape of which is formed by an arc or a circle.

7. Device of one of claims 1 to 6, characterized in that the cam joint (za) is disposed between the intermediate member (Z) and the power take-off member (A).

8. Device of one of claims 1 to 6, characterized in that the cam joint (za) is disposed between the intermediate member (Z) and the housing (G).

9. Device of one of claims 1 to 6, characterized in that the cam joint (za) is disposed on a transfer member located between the intermediate member (Z) and the power take-off member (A).

10. Device for actuating the charge-cycling valves (V) in reciprocating internal combustion engines, consisting of a housing (G); a cam (N) mounted in the housing (G) in a revolute joint (ng) so as to be able to rotate, the rotational movement of which cam is derived from a crankshaft; an intermediate member (Z) activated by this cam (N) by way of a first cam joint (zn); and a power take-off member (A) that transfers the movement to the valve (V), and is connected to act with the intermediate member (Z), directly or via other transfer elements, and at least one further cam joint (za) is provided within the active connection from the first cam joint (zn) to the power

take-off member (A), characterized in that this further cam joint (za) at one of the two gear mechanism members (Z, A), which form the cam joint (za), in and of themselves, is formed by a cam (Kz or Ka), the shape of which, in the contact region, in which the transition from the region, in which no valve lift is produced, into the region, in which a valve lift is produced, is formed by a segment and an evolvent section.